TABLE 7

Heterocyclic functionality	Example	Viscosity at 39.8 s^{-1} (cP)	Relative viscosity
None	Example 10	135	100%
Glydicyl post-reacted with acid	Example 4B	80	59%
Pyrrolidone	Example 1	54	40%

[0266] The results in Table 7 indicate that the addition polymers that include heterocyclic functionality better disperse carbon than addition polymer that do not as demonstrated by the reduced viscosity of carbon dispersions that include the addition polymers from Examples 1 and 4B as compared to the addition polymer of Example 10.

[0267] It will be appreciated by skilled artisans that numerous modifications and variations are possible in light of the above disclosure without departing from the broad inventive concepts described and exemplified herein. Accordingly, it is therefore to be understood that the foregoing disclosure is merely illustrative of various exemplary aspects of this application and that numerous modifications and variations can be readily made by skilled artisans which are within the spirit and scope of this application and the accompanying claims.

What is claimed is:

1. A slurry composition comprising:

(a) an electrochemically active material;

(b) a binder comprising:

(i) a polymer comprising a fluoropolymer dispersed in a liquid medium; and

(ii) a polymer comprising an addition polymer comprising constitutional units comprising the residue of a heterocyclic group-containing ethylenically unsaturated monomer.

2. The slurry composition of claim **1**, wherein the heterocyclic group-containing ethylenically unsaturated monomer comprises an epoxy functional ethylenically unsaturated monomer, vinyl pyrrolidone, or combinations thereof.

3. The slurry composition of claim **1**, wherein the addition polymer further comprises constitutional units comprising the residue of methyl(meth)acrylate.

4. The slurry composition of claim **1**, wherein the addition polymer comprises constitutional units comprising the residues of the epoxy functional ethylenically unsaturated monomer and methyl(meth)acrylate.

5. The slurry composition of claim **4**, wherein the addition polymer comprises constitutional units comprising 0.1% to 50% by weight of the residue of the epoxy functional ethylenically unsaturated monomer, and 1% to 90% by weight of the residue of methyl(meth)acrylate, the % by weight based on the total weight of the addition polymer.

6. The slurry composition of claim **1**, wherein the addition polymer comprises constitutional units comprising the residue of vinyl pyrrolidone and methyl(meth)acrylate.

7. The slurry composition of claim **6**, wherein the addition polymer comprises constitutional units comprising 1% to 99% by weight of the residue of vinyl pyrrolidone and 1% to 99% by weight of the residue of methyl(meth)acrylate, the % by weight based on the total weight of the addition polymer.

8. The slurry composition of claim **1**, wherein the addition polymer comprises at least one heterocyclic group, and a compound having a functional group reactive with the heterocyclic group is grafted onto the addition polymer by reaction with the heterocyclic group.

9. The slurry composition of claim **8**, wherein the compound having a functional group reactive with the heterocyclic group comprises an aromatic compound.

10. The slurry composition of claim **8**, wherein the functional group comprises thiol, amino, hydroxyl, carboxylic acid or combinations thereof.

11. The slurry composition of claim **1**, wherein the liquid medium comprises an organic medium having an evaporation rate of less than 10 g/min m^2, at the dissolution temperature of the fluoropolymer dispersed in the organic medium.

12. The slurry composition of claim **11**, wherein the organic medium has an evaporation rate greater than 80 g/min m^2, at 180° C.

13. The slurry composition of claim **11**, wherein the organic medium comprises butyl pyrrolidone, trialkylphosphate, 1,2,3-triacetoxypropane, 3-methoxy-N,N-dimethylpropanamide, ethyl acetoacetate, gamma-butyrolactone, propylene glycol methyl ether, or combinations thereof.

14. The slurry composition of claim **11**, wherein the organic medium comprises a primary solvent comprising trialkylphosphate and a co-solvent.

15. The slurry composition of claim **11**, wherein the addition polymer is prepared by conventional free radical initiated solution polymerization of a mixture of ethylenically unsaturated monomers comprising at least one heterocyclic group-containing ethylenically unsaturated monomer dissolved in a second organic medium.

16. The slurry composition of claim **15**, wherein the second organic medium used to prepare the addition polymer is the same as the organic medium of the slurry composition.

17. The slurry composition of claim **1**, further comprising a second addition polymer free of heterocyclic groups.

18. The slurry composition of claim **1**, wherein the slurry is substantially free of isophorone.

19. The slurry composition of claim **1**, wherein the slurry is substantially free of N-methyl-2-pyrrolidone.

20. The slurry composition of claim **1**, further comprising (c) an electrically conductive agent.

21. The slurry composition of claim **20**, wherein the electrically conductive agent comprises graphite, acetylene black, furnace black, graphene, carbon nanotubes, or combinations thereof.

22. The slurry composition of claim **20**, wherein the electrically conductive agent comprises conductive carbon material having a surface area of 100 m^2/g to 1000 m^2/g.

23. A slurry composition comprising:

(a) an electrically conductive agent;

(b) a binder comprising:

(i) a polymer comprising a fluoropolymer dispersed in a liquid medium; and

(ii) a polymer comprising an addition polymer comprising constitutional units comprising the residue of a heterocyclic group-containing ethylenically unsaturated monomer.

24. An electrode comprising:

(a) an electrical current collector; and

(b) a film formed on the electrical current collector, wherein the film is deposited from the slurry composition of claim **20**.